

Assembly consisting of a boot and an inserting device

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The invention relates to a device for inserting wall fixings, especially a device operated by compressed gas.

5 More precisely, the invention relates to an inserting device that comprises, in the axis of a gun, a wall-plug guide whose job is to guide the fixing element, or wall-plug into the material for which it is intended. The wall-plug guide acts in combination with a contact
10 foot to position the device with respect to the surface of the material.

The wall-plug is inserted at right angles into the surface of the material. Consequently, when fixing
15 wall-plugs in a ceiling, the device is underneath the ceiling during insertion and is therefore liable to receive dust and other particles produced by the insertion of the plug. The effect of this is to accelerate the wear of the mechanism of the device and
20 to interfere with its operation.

It is an object of the present invention to reduce these problems.

25 To this end the present application relates to an assembly consisting of a wall-plug inserting device and a boot, the inserting device comprising a wall-plug guide and a contact foot which helps the wall-plug guide to position the device with respect to the
30 surface of the material into which a wall-plug is to be inserted, the boot being designed to cover the device and having means designed to engage with the wall-plug guide and means designed to engage with the contact foot and thus retain the boot on the device.

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It is thus the contact foot and the wall-plug guide which keep the boot on the device.

The boot is preferably provided with a through hole for

the wall-plug guide and with a through hole for the contact foot.

5 Preferably, again, the boot is held on the device, more particularly at the instant of firing, by the bracing of the boot between the through hole of the wall-plug guide and the through hole of the contact foot.

10 Preferably, too, the boot is provided with stiffening ribs.

The device advantageously comprises a pushbutton, for a feed magazine of wall-plugs, and the boot comprises a recess for access to the said pushbutton.

15 Advantageously also, the boot is provided with a bellows which embraces the wall-plug guide.

20 The boot of the invention thus comprises a pierced head, a stock and pierced foot.

A clearer understanding of the invention will be gained from the following description of the preferred embodiment of the invention, in which:

25 - Figure 1 is a partial perspective view of the assembly of the invention, when the boot is not fitted on the inserting device;

30 - Figure 2 is a partial perspective view of the assembly seen in Figure 1, when the boot is fitted on the inserting device;

35 - Figure 3 is a partial side view, partly in section, of the assembly seen in Figure 2;

- Figure 4 is a rear perspective view of the boot of the assembly of the invention; and

- Figure 5 is a partial side view, partly in section, of another embodiment of the assembly of the invention.

5 The description will refer to an inserting device operated by compressed gas, but it goes without saying that the Applicant does not mean by this to be limited to this type of inserting device. Any other inserting device may be envisaged, such as inserting devices
10 using explosive charges.

Also, the description which follows will refer to the case in which the device 3 is vertical, that is to say the axis 4 of the gun is horizontal, the boot being
15 positioned relative to the device 3 accordingly, in order to be able to be fitted onto it. Thus, when for example a face of the device is said to be vertical, it will mean that it is vertical in this position.

20 Referring to Figure 1, the assembly 1 of the present invention comprises an inserting device 3 and a boot 2 designed to fit together. The inserting device 3 comprises a grip 36, a housing for a compressed gas cartridge 35, a wall-plug feed magazine 33 and its
25 pushbutton 34, a wall-plug guide 31 extending along an axis 4, a contact foot 32 and a casing 37. The boot 2 is made of rigid plastic as a one-piece moulding. However, three parts can be distinguished within its general shape: a head 25, a foot 26 and a stock 27.
30 These three parts are shaped so as to cover the corresponding parts of the inserting device 3. Also, the head 25 has a through hole 21 for the wall-plug guide 31, the foot 26 has a through hole 22 for the contact foot 32, and the stock 27 has stiffening ribs
35 23.

Without going into details, the use of the inserting device 3 is as follows: an operator grasps the device 3 by the grip 36. He presses the device 3 against the

surface of the material into which he wishes to insert a wall-plug, so that the axis 4 of the wall-plug guide 31 is perpendicular to the said surface. The wall-plug guide 31, which is telescopic, will therefore depress slightly. The operator controls the perpendicularity of the axis 4 with the surface of the material by means of the interaction of the wall-plug guide 31 and contact foot 32. The pressure of the wall-plug guide 31 is also useful from the point of view of safety, because the wall-plug cannot be fired without this pressure. Once the wall-plug guide 31 is pressed against the surface, therefore, the device can be fired. The compressed gas held in the cartridge inside the housing 35 propels the wall-plug from the wall-plug feed magazine 33, which can be opened or closed using the pushbutton 34, into the support.

The job of the boot 2 is to cover the device 3 and so protect it against the intrusion of dust. Thus the head 25, situated around the through hole 21 of the wall-plug guide 31, covers the upper part of the inserting device 3; it covers and in fact surrounds the upper part of the inserting device, as can be seen particularly by means of its part 28, except here on the left-hand side where there is a recess 29 allowing free access to the pushbutton 34, once the boot 2 is in place.

The stock 27 consists of a surface which, when the boot 2 is on the device 3, is practically vertical, optionally convex, with side walls 30 extending towards the device 3. It protects the vertical front face of the device 3. It has horizontal stiffening ribs 23, formed for example by displacement of material.

The foot 26 is shaped in such a way as to protect the lower part of the apparatus 3. It too contains a through hole 22 for the contact foot 32. The head 25 has a similar through hole 21 for the wall-plug guide

31. Hence the positioning of these two holes 21, 22 onto the wall-plug guide 31 and the contact foot 32, respectively, has the effect of fitting the boot 2 onto the device 3, as can be seen in Figure 2, so that the boot 2 thereby covers the whole of the front face to the device 3. This front face of the device 3 is therefore protected against the intrusion of dust and other particles when inserting a wall-plug into a horizontal support located above the device 3, in particular.

Referring to Figure 3, it can be seen that once fitted, the boot is a close fit on the device 3, and protects the whole of the front face of the device 3, with the exception of the wall-plug guide 31 and the contact foot 32.

Referring to Figure 4, the boot 2 is therefore produced as a one-piece moulding. The through holes 21, 22 for the wall-plug guide 31 and the contact foot 32, respectively, are designed to hold the boot 2 on the device 3 by engagement with the wall-plug guide 31 and the contact foot 32. The boot 2 therefore has no need for additional fixing or retaining means. Retention is provided by a bracing action, especially here at the instant of firing, because at this moment the wall-plug guide 31 recoils, bracing the boot 2 between the two through holes 21, 22 of the wall-plug guide 31 and the contact foot 32, respectively. This bracing action keeps the boot 2 on the device 3.

Lastly, referring to Figure 5, it is possible to provide a bellows 40 on the axis 4 of the through hole 21 of the wall-plug guide 31. Here, the rigid part 2' of the boot 2 stops around the through hole 21 of the wall-plug guide 31, at the limit of the part 3' of the device 3 which remains stationary with respect to the casing 37 when the device is fired, the wall-plug guide 31 being telescopic. AS a result, this telescopic wall-

plug guide 31 is caused to recede when the device 3 is pressed against the surface, and to move along its axis 4 when the plug is fired. Consequently the rigid part 2' of the boot 2 cannot press against it, because it would interfere with its operation. However, protection against dust may also be useful at the junction between the fixed part 3' and the telescopic wall-plug guide 31. It is therefore proposed in the embodiment seen in Figure 5 to add a bellows 40, the free end 40'' of which grips the wall-plug guide 31, while the other end 40' is joined to the rigid part 2' of the boot 2, around the through hole 21 of the wall-plug guide 31. Consequently when the wall-plug guide 31 moves, the end 40'' of the bellows 40 stays in contact with this telescopic part 31 and follows it in its movement. This contact keeps dust out and protects the junction between the telescopic part 31 and the fixed part 3'.